CLAIM(S)

What is claimed is:

1. A method for an 802.11 station to save power, the station switching between a wakeup state and a doze state, the steps comprising:

switching to a doze state;

switching to a wakeup state;

transmitting an uplink frame to an access point;

receiving an acknowledgement for the uplink frame from the access point, with a flag set in the acknowledgement to indicate that the access point has frames buffered for the station;

receiving a buffered downlink frame from the access point; and

returning to the doze state only after a flag in the buffered downlink frame indicates that the access point does not have another buffered downlink frame for the station

wherein the power consumption in the doze state is less than the power consumption in the wakeup state.

2. The method of claim 1 further comprising notifying an access point at the 802.11 station is operating in an automatic power save delivery mode.

3. The method of claim 1 wherein the 802.11 station is a voice station and the uplink frame.is a periodic voice packet transmission, the method further comprising querying the access point for buffered downlink transmissions at a rate that corresponds to a packet rate for an interactive voice communications stream.

4. The method of claim 3 further comprising sending a predetermined uplink frame during a period of silence suppression to query the access point for a buffered downlink transmission.

5. The method of claim 4 wherein the predetermined uplink frame is a null data

frame.

6. The method of claim 3 further comprising:

establishing scheduled wakeup times with the access point, which coincide with 802.11 Beacon transmissions;

automatically receiving a buffered downlink frame from the access point following a scheduled wakeup time;

suppressing successive predetermined uplink frames during periods of silence suppression when the access point indicates it does not have a buffered downlink frame;

returning to the power save state until the occurrence of at least one of the group consisting of a next scheduled wakeup time and the 802.11 station has an uplink frame.

7. The method of claim 1 further comprising setting a flag by the 802.11 station in the uplink frame to indicate that the 802.11 station will stay in the operating state to send a successive uplink frames.

8. The method of claim 7 further comprising:

receiving a poll from the access point to solicit an uplink transmission; and

sending an uplink frame without first sensing a channel to determine if the channel is idle.

9. The method of claim 8 further comprising receiving a poll piggybacked onto a downlink data frame.

10. The method of claim 9 further comprising adding a data link acknowledgement for a downlink data frame to an uplink data frame.

11. The method of claim 9 further comprising receiving a data link acknowledgement piggybacked onto a downlink data frame.

12 The method of claim 1 further comprising

sensing when the channel is idle;

sending at least one uplink frame interleaved in a bidirectional burst of uplink and downlink data frames following the initial channel sense; and

sending at least one successive uplink frame without sensing when the channel is idle.

13. An 802.11 station, comprising:

means for switching to a power save state;

means for switching to an operating state;

means for transmitting an uplink frame to an access point;

means for receiving an acknowledgement for the uplink frame from the access point where a flag in the acknowledgement indicates that the access point has one or more downlink frames buffered for the station;

means for receiving a buffered downlink frame from the access point; and

means for returning to the power save state after a flag in the buffered downlink frame indicating the access point does not have another buffered downlink frame for the 802.11 station

wherein the power consumption in the power save state is less than the power consumption in the operating state..

14. The 802.11 station of claim 13 further comprising means for notifying an access point at the 802.11 station is operating in an automatic power save delivery mode.

15 The 802.11 station of claim 13 wherein the 802.11 station is a voice station and the uplink frame.is a periodic voice packet transmission, the 802.11 station further comprising means for querying the access point for buffered downlink transmissions at a rate that corresponds to a packet rate for an interactive voice communications stream.

16. The 802.11 station of claim 15 further comprising sending means for sending a predetermined uplink frame during a period of silence suppression to query the access point for a buffered downlink transmission.

17. The 802.11 station of claim 16 wherein the predetermined uplink frame is a null data frame.

18. The 802.11 station of claim 15 further comprising:

means for establishing scheduled wakeup times with the access point, which coincide with 802.11 Beacon transmissions;

means for automatically receiving a buffered downlink frame from the access point following a scheduled wakeup time;

means for suppressing successive predetermined uplink frames during periods of silence suppression when the access point indicates it does not have a buffered downlink frame;

means for returning to the power save state until the occurrence of at least one of the group consisting of a next scheduled wakeup time and the 802.11 station has an uplink frame queued for transmission.

19. The 802.11 station of claim 13 further comprising means for setting a flag by the 802.11 station in the uplink frame to indicate that the 802.11 station will stay in the operating state to send a successive uplink frame.

20. The 802.11 station of claim 19 further comprising:

means for receiving a poll from the access point to solicit an uplink transmission; and

means for sending an uplink frame without first sensing a channel to determine if the channel is idle.

21. The 802.11 station of claim 20 further comprising means for receiving a poll

piggybacked onto a downlink data frame.

22. The 802.11 station of claim 21 further comprising means for adding a data link acknowledgement to an uplink frame.

23. The 802.11 station of claim 21 further comprising means for receiving a data link acknowledgement piggybacked onto a downlink frame.

24 The 802.11 station of claim 13 further comprising

means for sensing when the channel is idle;

means for sending at least one uplink frame interleaved in a bidirectional burst of uplink and downlink data frames following the initial channel sense; and

means for sending at least one successive uplink frame without sensing when the channel is idle.

25. A computer program product having a computer readable medium having computer program logic recorded thereon for operating an 802.11 wireless station, comprising:

means for switching the station to a power save state;

means for switching the station to an operating state;

means for transmitting an uplink frame to an access point;

means for receiving an acknowledgement for the uplink frame from the access point where a flag in the acknowledgement indicates that the access point has one or more downlink frames buffered for the station;

means for receiving a buffered downlink frame from the access point; and

means for returning to the power save state after a flag in the buffered downlink frame indicating the access point does not have another buffered downlink frame for the 802.11 station

wherein the power consumption in the power save state is less than the power

consumption in the operating state..

26. The computer program product of claim 25 further comprising means for notifying an access point at the station is operating in an automatic power save delivery mode.

27 The computer program product of claim 25 wherein the station is a voice station and the uplink frame.is a periodic voice packet transmission, the computer program product further comprising means for querying the access point for buffered downlink transmissions at a rate that corresponds to a packet rate for an interactive voice communications stream.

28. The computer program product of claim 27 further comprising sending means for sending a predetermined uplink frame during a period of silence suppression to query the access point for a buffered downlink transmission.

29. The computer program product of claim 28 wherein the predetermined uplink frame is a null data frame.

30. The computer program product of claim 27 further comprising:

means for establishing scheduled wakeup times with the access point, which coincide with 802.11 Beacon transmissions;

means for automatically receiving a buffered downlink frame from the access point following a scheduled wakeup time;

means for suppressing successive predetermined uplink frames during periods of silence suppression when the access point indicates it does not have a buffered downlink frame;

means for returning to the power save state until the occurrence of at least one of the group consisting of a next scheduled wakeup time and the station has an uplink frame.

31. The computer program product of claim 25 further comprising means for setting a flag by in the uplink frame to indicate that the station will stay in the operating state to send a successive uplink frame.

32. The computer program product of claim 31 further comprising:

means for receiving a poll from the access point to solicit an uplink transmission; and

means for sending an uplink frame without first sensing a channel to determine if the channel is idle.

33. The computer program product of claim 32 further comprising means for receiving a poll piggybacked onto a downlink data frame.

34. The computer program product of claim 33 further comprising means for adding a data link acknowledgement to an uplink frame.

35. The computer program product of claim 33 further comprising means for receiving a data link acknowledgement appended to a downlink frame.

36 The computer program product of claim 25 further comprising

means for sensing when the channel is idle;

means for sending at least one uplink frame interleaved in a bidirectional burst following the initial channel sense; and

means for sending at least one successive uplink frame without sensing when the channel is idle.

37. A method for Access Point to communicate with an 802.11 station, the 802.11 station switching between an operating state and power save state, the steps comprising:

receiving a notification from the 802.11 station that the station is operating in an automatic power save delivery mode;

receiving an uplink frame from the 802.11 station;

setting a flag in the acknowledgement for the uplink frame to indicate that downlink frames are buffered for the 802.11 station;

sending at least one buffered downlink frame to the 802.11 station, wherein the last downlink frame sent contains a flag indicating the access point does not have another buffered downlink frame for the 802.11 station.

38. The method of claim 37 wherein the 802.11 station is a voice station and the uplink frame is a periodic voice packet transmission, the method further comprising querying the access point for buffered downlink transmissions at a rate that corresponds to a packet rate for an interactive voice communications stream.

39. The method of claim 37 wherein the predetermined uplink frame is a null frame.

40. The method of claim 37 further comprising:

establishing scheduled wakeup times with the 802.11 station, which coincide with 802.11 Beacon transmissions;

automatically sending a buffered downlink frame from the access point following a scheduled wakeup time.

41. The method of claim 37 further comprising receiving a flag in the uplink frame set by the 802.11 station to indicate that the 802.11 station will stay in the operating state to send a successive uplink frame.

42. The method of claim 37 further comprising:

sending a poll from the access point to solicit an uplink transmission.

43. The method of claim 32 further comprising sending a poll piggybacked onto a

downlink data frame.

44. The method of claim 43 further comprising sending a data link acknowledgement piggybacked onto a downlink frame.

45 The method of claim 37 further comprising

sensing when the channel is idle;

sending at least one downlink frame interleaved in a bidirectional burst of downlink and uplink frames following the initial channel sense; and

sending at least one successive downlink frame without sensing when the channel is idle.

46. A method, the steps comprising:

notifying an access point by a power save 802.11 station that the station is operating in an automatic power save delivery mode,

automatically sending a downlink frame to the station when the access point determines the station is in an awake state;

buffering a downlink frame by the access point when the access point determines the station is in a power save state;

negotiating a periodic wakeup schedule between the station and an access point, the schedule comprises a scheduled start time and a wakeup period, the wakeup period is defined as the time between each scheduled wakeup time and corresponds to a packet rate for an interactive voice communications session;

synchronizing wakeup times with the 802.11 Timer Synchronization Function; and

sending a poll by the access point at the start of each scheduled wakeup time, the poll comprising a poll frame, the poll frame comprising a flag indicating if the access point has a downlink frame buffered for the station.

47. The method of claim 46 further comprising sending a downlink frame

containing a channel reservation for a channel, the channel reservation selected from the group consisting of an implicit channel reservation and an explicit channel reservation, wherein the channel reservation inhibits transmissions from other stations.

48. The method of claim 47 further comprising sending a frame in response to the poll by the access point without first sensing the channel to determine if the channel is idle.

49. The method of claim 46 wherein the station stays in an awake state following each scheduled wakeup time until the access point sends a frame with a flag set to indicate that the access point does not have a downlink frame buffered for the station.

50. The method of claim 46 wherein the station is a voice station.

51. The method of claim 46 wherein the poll is piggybacked on the downlink data frame.

52. The method of claim 51 further comprising setting a flag in an uplink frame sent by the station to the access point to indicate the station will stay in the awake state to send at least one successive uplink frame to the access point, the uplink frame sent in response to the poll.

53. The method of claim 52 further comprising sending a successive poll to the station by the access point, the station sending an uplink frame without first sensing the channel to determine whether the channel is idle.

54. The method of claim 53 wherein a data link acknowledgement is piggybacked onto at least one of the group consisting of the uplink frame and the downlink frame.

55. The method of claim 54 further comprising:

sensing the channel before sending the poll; and

sending at least one frame from the group consisting of the uplink frame and the downlink frame interleaved in a bidirectional burst, wherein the frame is sent after the poll and the channel is only sensed before the initial poll.

56. The method of claim 46 wherein the station is a power save voice station, the method further comprising:

sending a message by the station to the access point to negotiate a fast wakeup schedule at the start of an interactive voice session; and

sending a message by the station to the access point to terminate the fast wakeup schedule at the end of the interactive voice session.

57. The method of claim 46 further comprising:

determining wakeup schedule start times and wakeup periods; and

selecting a non-overlapping wakeup times and wakeup periods to minimize the time that a station must stay awake.

58. The method of claim 46 wherein the station has a voice sampling rate that is faster than a wakeup period, the method further comprising:

immediately queuing voice samples for transmission; and

coalescing any available voice samples into a data communications packet before a scheduled wakeup time.

59. The method of claim 46 further comprising:

determining the Internet Protocol address of the station by the access point

providing a proxy Address Resolution Protocol service by the access point for the station so that the station does not need to receive broadcast Address Resolution Protocol Request messages; and

indicating to the station that the proxy Address Resolution Protocol service is being

provided by the access point.

60. The method of claim 59 wherein the station does not stay awake to receive broadcast transmissions following a Delivery Traffic Indication Message beacon.

61. The method of claim 59 wherein the station does not stay awake to receive multicast transmissions following a Delivery Traffic Indication Message beacon.

62. The method of claim 59 further comprising registering an Internet Protocol address for the station with the access point.

63. The method of claim 62 further comprising registering the Internet Protocol address of the station with a second access point whenever the station reassociates with the second access point.

64. The method of claim 59 further comprising:

snooping packets by the access point send from the station and learning the Internet Protocol address of the station;

storing the Internet Protocol address by the access point; and

sending the Internet Protocol address to a second access point over the network infrastructure when the station roams to the second access point.

65. A method for an access point to communicate with a wireless station, the steps comprising:

receiving a notification from the station that the station is in an automatic power save delivery mode;

buffering a downlink frame while the station is in a power save state;

automatically sending a downlink frame to the station when the station is in the wakeup state;

negotiating a periodic wakeup schedule with the station, the schedule comprises a scheduled start time and a wakeup period, the wakeup period is defined as the time between each scheduled wakeup time and corresponds to a packet rate for an interactive voice communications session;

synchronizing wakeup times with the 802.11 Timer Synchronization Function; and

sending a poll at the start of each scheduled wakeup time, the poll comprising a poll frame, the poll frame comprising a flag indicating if the access point has a downlink frame buffered for the station.

66. The method of claim 65 further comprising sending a downlink frame containing a channel reservation for a channel, the channel reservation selected from the group consisting of an implicit channel reservation and an explicit channel reservation, wherein the channel reservation inhibits transmissions from other stations.

67. The method of claim 65 wherein the poll is piggybacked on the downlink data frame.

68. The method of claim 65 wherein a data link acknowledgement is piggybacked onto the downlink frame.

69. The method of claim 65 further comprising:

sensing the channel before sending the poll,

sending at least one downlink frame interleaved in a bidirectional burst of downlink and uplink frames, wherein the channel is only sensed before the initial poll.

70. The method of claim 69 further comprising sending a successive downlink frame without sensing the channel.

71. The method of claim 66 wherein the station is a power save voice station, the

method further comprising:

receiving a message from the station at the start of an interactive voice session;

negotiating a fast wakeup schedule with the station; and

receiving a message from the station terminating the fast wakeup schedule at the end of the interactive voice session.

72. The method of claim 66 further comprising:

determining wakeup schedule start times and wakeup periods; and

selecting non-overlapping wakeup times and wakeup periods.

73. The method of claim 66 further comprising:

determining an Internet Protocol address for the station;

providing a proxy Address Resolution Protocol service for the station so that the station does not need to receive broadcast Address Resolution Protocol Request messages; and

indicating to the station that the proxy Address Resolution Protocol service is being provided.

74. The method of claim 73 further comprising the registering the Internet Protocol address for the station with the access point.

75. The method of claim 73 further comprising:

snooping packets by the access point received from the station and learning the Internet Protocol address of the station;

storing the Internet Protocol address by the access point.

76. The method of claim 75 further comprising sending the Internet Protocol address to a second access point over the network infrastructure when the station roams to the second access point.

77. An access point, comprising:

means for receiving a notification from the station that the station is in an automatic power save delivery mode;

means for buffering a downlink frame while the station is in a power save state;

means for automatically sending a downlink frame to the station when the station is in the wakeup state;

means for negotiating a periodic wakeup schedule with the station, the schedule comprises a scheduled start time and a wakeup period, the wakeup period is defined as the time between each scheduled wakeup time and corresponds to a packet rate for an interactive voice communications session;

means for synchronizing wakeup times with the 802.11 Timer Synchronization Function; and

means for sending a poll at the start of each scheduled wakeup time, the poll comprising a poll frame, the poll frame comprising a flag indicating if the access point has a downlink frame buffered for the station.

78. The access point of claim 77 further comprising means for sending a downlink frame containing a channel reservation for a channel, the channel reservation selected from the group consisting of an implicit channel reservation and an explicit channel reservation, wherein the channel reservation inhibits transmissions from other stations.

79. The access point of claim 77 further comprising:

means for sensing the channel before sending the poll,

means for sending at least one downlink frame interleaved in a bidirectional burst of downlink and uplink frames, wherein the channel is only sensed before the initial poll.

80. The access point of claim 79 further comprising means for sending a successive downlink frame without sensing the channel.

81. The access point of claim 77 further comprising:

means for determining an Internet Protocol address for the station;

means for providing a proxy Address Resolution Protocol service for the station so that the station does not need to receive broadcast Address Resolution Protocol Request messages; and

means for indicating to client stations that the proxy Address Resolution Protocol service is being provided.

82. The access point of claim 81 further comprising:

means for snooping packets by the access point received from the station and learning the Internet Protocol address of the station;

means for storing the Internet Protocol address by the access point.

83. The access point of claim 82 further comprising means for sending the Internet Protocol address to a second access point over the network infrastructure when the station roams to the second access point.

84. A method of operating in an automatic power save delivery mode by a wireless station, the steps comprising:

receiving a notification from a power save 802.11 station that the station is operating in an automatic power save delivery mode,

negotiating a periodic wakeup schedule between the station and an access point, the schedule comprises a scheduled start time and a wakeup period, the wakeup period is defined as the time between each scheduled wakeup time and corresponds to a packet rate for an interactive voice communications session;

synchronizing wakeup times with the 802.11 Timer Synchronization Function; and

waiting for a poll from the access point at the start of each scheduled wakeup time, the poll comprising a poll frame, the poll frame comprising a flag indicating if the access point has a downlink frame buffered for the station.

85. The method of claim 84 further comprising receiving a downlink frame containing a channel reservation for a channel, the channel reservation selected from the group consisting of an implicit channel reservation and an explicit channel reservation, wherein the channel reservation inhibits transmissions from other stations.

86. The method of claim 84 further comprising the station sending a frame in response to the poll by the sent by the access point without first sensing the channel to determine if the channel is idle.

87. The method of claim 84 wherein the station stays in an awake state following each scheduled wakeup time until receiving a frame with a flag set to indicate that the access point does not have a downlink frame buffered for the station.

88. The method of claim 84 wherein the station is a voice station.

89. The method of claim 84 further comprising setting a flag in an uplink frame sent by the station to the access point to indicate the station will stay in the awake state to send at least one successive uplink frame to the access point, the uplink frame sent in response to the poll.

90. The method of claim 84 wherein a data link acknowledgement is piggybacked onto the uplink frame.

91. The method of claim 84 further comprising:

receiving the poll; and

sending an uplink frame interleaved in a bidirectional burst, wherein the frame is sent after the poll and the channel is only sensed before the initial poll.

92. The method of claim 84 wherein the station is a power save voice station, the method further comprising:

sending a message to the access point to negotiate a fast wakeup schedule at the start of an interactive voice session; and

sending a message to the access point to terminate the fast wakeup schedule at the end of the interactive voice session.

93. The method of claim 84 wherein the station has a voice sampling rate that is faster than a wakeup period, the method further comprising:

immediately queuing voice samples for transmission;

coalescing any available voice samples into a data communications packet before a scheduled wakeup time; and

sending the data communications packet after the scheduled wakeup time.

94. The method of claim 84 further comprising registering an Internet Protocol address for the station with the access point.

95. The method of claim 94 further comprising registering the Internet Protocol address of the station with a second access point whenever the station reassociates with the second access point.

96. A computer program product having a computer readable medium having computer program logic recorded thereon for performing method of operating in an automatic power save delivery mode by a wireless station, the steps comprising:

means for receiving a notification from a power save 802.11 station that the station is operating in an automatic power save delivery mode,

means for negotiating a periodic wakeup schedule between the station and an access point, the schedule comprises a scheduled start time and a wakeup period, the wakeup period

is defined as the time between each scheduled wakeup time and corresponds to a packet rate for an interactive voice communications session;

means for synchronizing wakeup times with the 802.11 Timer Synchronization Function; and

means for waiting for a poll from the access point at the start of each scheduled wakeup time, the poll comprising a poll frame, the poll frame comprising a flag indicating if the access point has a downlink frame buffered for the station.

97. The computer program product of claim 96 further comprising means for receiving a downlink frame containing a channel reservation for a channel, the channel reservation selected from the group consisting of an implicit channel reservation and an explicit channel reservation, wherein the channel reservation inhibits transmissions from other stations.

98. The computer program product of claim 96 further comprising means for the station sending a frame in response to the poll sent by the access point without first sensing the channel to determine if the channel is idle.

99. The computer program product of claim 96 wherein the station stays in an awake state following each scheduled wakeup time until receiving a frame with a flag set to indicate that the access point does not have a downlink frame buffered for the station.

100. The computer program product of claim 96 further comprising means for setting a flag in an uplink frame sent by the station to the access point to indicate the station will stay in the awake state to send at least one successive uplink frame to the access point, the uplink frame sent in response to the poll.

101. The computer program product of claim 96 further comprising:

means for receiving the poll; and

means for sending an uplink frame interleaved in a bidirectional burst of uplink and downlink data frames, wherein the frame is sent after the poll and the channel is only sensed before the initial poll.

102. The computer program product of claim 96 wherein the station is a power save voice station, the method further comprising:

means for sending a message to the access point to negotiate a fast wakeup schedule at the start of an interactive voice session; and

means for sending a message to the access point to terminate the fast wakeup schedule at the end of the interactive voice session.

103. The computer program product of claim 96 wherein the station has a voice sampling rate that is faster than a wakeup period, the method further comprising:

means for immediately queuing voice samples for transmission;

means for coalescing any available voice samples into a data communications packet before a scheduled wakeup time; and

means for sending the data communications packet after the scheduled wakeup time.

104. The computer program product of claim 96 further comprising means for registering an Internet Protocol address for the station with the access point.

105. The computer program product of claim 97 further comprising registering the Internet Protocol address of the station with a second access point whenever the station reassociates with the second access point.

106. A method, the steps comprising:

receiving the broadcast Address Resolution Protocol request on a wired port;

searching at least one of Internet Protocol bindings and Media Access Control bindings for an Internet Protocol address by matching a target Internet Protocol address contained in the

broadcast Address Resolution Protocol request;

sending a reply to the broadcast Address Resolution Protocol request, the reply comprising a Media Access Control address that corresponds to the target Internet Protocol address; the Access Point indicates to client stations that it is providing such a service; and power-save stations do not stay awake to receive all broadcast and multicast downlink transmissions from the AP.

107. The method of claim 106 further comprising receiving a registration message from the client, the registration message comprising an Internet Protocol address for the client.

108. The method of claim 106 further comprising snooping packets sent from the client and determining the client's Internet Protocol address.

109. The method of claim 106 wherein the wired port is an Ethernet port.

110. An access point, comprising:

a proxy Address Resolution Protocol server

means for receiving a broadcast Address Resolution Protocol request on an Ethernet port, the request comprising a target Internet Protocol address;

means for searching at least one of Internet Protocol bindings and Media Access Control bindings for an Internet Protocol address by matching the target Internet Protocol address contained in the broadcast Address Resolution Protocol request;

means for sending a reply to the broadcast Address Resolution Protocol request, the reply comprising a Media Access Control address that corresponds to the target Internet Protocol address; the Access Point indicates to client stations that it is providing such a service; and power-save stations do not stay awake to receive all broadcast and multicast downlink transmissions from the AP. .

111. The access point of claim 110 further comprising means for receiving a

registration message from the client, the registration message comprising an Internet Protocol address for the client.

112. The access point of claim 110 further comprising means for snooping packets sent from the client and determining the client's Internet Protocol address.

113. A method for an access point with a proxy Address Resolution Protocol server to handle a broadcast Address Resolution Protocol requests on its wired port, the steps comprising:

receiving the broadcast Address Resolution Protocol request for a target station, the request comprising a destination broadcast Media Access Control address and a target Internet Protocol address;

searching at least one of Internet Protocol bindings and Media Access Control bindings for an Internet Protocol address by matching a target Internet Protocol address contained in the broadcast Address Resolution Protocol request;

translating the destination broadcast Media Access Control address to a unicast Media Access Control address corresponding to the target Internet Protocol address; and

forwarding the request to the target station;

wherein the Access Point indicates to client stations that it is providing such a service; and power-save stations do not stay awake to receive all broadcast and multicast downlink transmissions from the AP.

114. The method of claim 113 further comprising:

receiving a response to the request from the target station; and

forwarding the response on the Ethernet port.

115. The method of claim 113 wherein the target station is a automatic power save delivery station, the steps further comprising buffering the request until the target station is in an awake state.

116. An access point, comprising

a proxy Address Resolution Protocol server;

means for receiving the broadcast Address Resolution Protocol request for a target station, the request comprising a destination broadcast Media Access Control address and a target Internet Protocol address;

means for searching at least one of Internet Protocol bindings and Media Access Control bindings for an Internet Protocol address by matching a target Internet Protocol address contained in the broadcast Address Resolution Protocol request;

means for translating the destination broadcast Media Access Control address to a unicast Media Access Control address corresponding to the target Internet Protocol address; and

means for forwarding the request to the target station;

wherein the Access Point indicates to client stations that it is providing such a service; and power-save stations do not stay awake to receive all broadcast and multicast downlink transmissions from the AP. .

117. The access point of claim 116 further comprising:

means for receiving a response to the request from the target station; and

means for forwarding the response on the Ethernet port.

118. The access point of claim 116 wherein the target station is a automatic power save delivery station, the steps further comprising means for buffering the request until the target station is in an awake state.